

### **REMARKS**

Claims 29-54 and 56-62 are pending in the present application. Claims 29-31, 34-38, 41-44, 46-48 and 51-54 have been amended. Claims 57-62 have been presented herewith. Claim 55 has been canceled.

### **Priority Under 35 U.S.C. 119**

Applicant notes the Examiner's acknowledgment of the Claim for Priority under 35 U.S.C. 119, and receipt of the certified copy of the priority document.

### **Drawings**

Applicant notes the Examiner's acceptance of the drawings as filed along with the present application on December 10, 2004.

With further regard to the drawings, enclosed are two (2) drawing Annotated Sheets, wherein Fig. 14 has been corrected so that the electrode in second mixing chamber 110 is denoted by reference numeral 125, as described on page 25 of the present application. Also, Fig. 15 has been corrected to include reference numerals which correspond to a sampling channel (111), a liquid blocking valve (116), a bore (122), a first orifice (113), a first electrode pair (117, 120), a second orifice (109) and a second electrode pair (121, 125), as described on pages 25 and 26 of the application. Also enclosed are two (2) drawing Replacement Sheets, incorporating the above noted corrections. **The Examiner is respectfully requested to acknowledge receipt and**

**acceptance of the drawing Replacement Sheets.**

**Claim Objections**

Claims 31 and 54 have been objected to in view of the informalities as listed on page 2 of the current Office Action dated October 28, 2008. Claims 31 and 54 have been corrected in view of the objections. The Examiner is therefore respectfully requested to withdraw the objection to the claims.

**Claim Rejections-35 U.S.C. 112**

Claims 30, 34, 36-41, 43, 48-52, 55 and 56 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite. This rejection is respectfully traversed for the following reasons.

The claims have been amended to improve antecedent. Regarding claim 30, as described on page 24 of the present application with respect to Fig. 14, after the blood sampling, the sampling member is turned to the second position and the sample **is flushed into** the first mixing chamber 112 by the liquid in the first storage chamber 103. In the first mixing chamber 112, the sample is diluted with the liquid from the first storage chamber 103, and a fraction **is blown back into** the first cavity of the sampling member 104. Sampling member 104 is then turned to the third position so that the diluted sample is flushed into second mixing chamber 110 by the liquid from second storage chamber 105. Applicant therefore submits that the first cavity for **entrance** of

liquid and for discharge of the liquid sample is definite. Also, in claim 41 the features regarding the height of the chamber have been deleted. Applicant respectfully submits that the claims are in compliance with 35 U.S.C. 112, second paragraph, and thus respectfully urges the Examiner to withdraw this rejection.

**Claim Rejections-35 U.S.C. 102**

Claims 29, 32, 35, 43, 46-51 and 53 have been rejected under 35 U.S.C. 102(b) as being anticipated by the Berndtsson reference (U.S. Patent No. 6,387,328). This rejection, insofar as it may pertain to the presently pending claims, is traversed for the following reasons.

The cartridge of claim 29 includes in combination among other features a first collection chamber "separated by a first wall from the first mixing chamber, the first wall having a first orifice for the passage of particles between the first mixing chamber and the first collection chamber". Applicant respectfully submits that the Berndtsson reference as relied upon by the Examiner does not disclose these features.

The Berndtsson reference discloses a cartridge for blood testing, in particular a disposable sampling device which connects to a separate apparatus for counting particles contained in a liquid collected into the sampling device. The operational sequence of the device is illustrated in Figs. 2-9. The device includes a chamber 61 as described in column 4, lines 57-61, that mixes the blood sample with liquid L originally stored in cylinder 44 above piston 47. As illustrated in Figs. 2-9 of the Berndtsson

reference, the flow cycle during blood testing is rather complex, whereby the blood sample is moved back and forth within the device, initially flushing the blood sample and the liquid L into chamber 61 under increased pressure, and thereafter drawing the mixture back into cylinder 44, and finally pushing the mixture into measuring channel 63 comprising a capillary 64 with electrode 65 and 66 on either side thereof.

The Examiner has interpreted chamber 61 and conical recess 59 as shown in Fig. 2 of the Berndtsson reference for example, respectively as the first mixing chamber and the first collection chamber of claim 29. However, chamber 61 in Fig. 2 of the Berndtsson reference is not separated from conical recess 59 by a first wall, wherein the first wall has a first orifice for passage of particles between chamber 61 and conical recess 59. In particular, channels 56 and 60 are shown in Fig. 2 as respectively in communication with conical recess 59 and chamber 61, with cylindrical valve chamber 52 there between. An orifice within body 40 is not shown in the apparatus of Fig. 2 of the Berndtsson reference as within a wall between conical recess 59 and chamber 61. One of ordinary skill would readily comprehend that channels 56 and 60 as taken with cylindrical valve chamber 52 do not constitute an orifice within a wall, as would be necessary to meet the features of claim 29.

In particular, conical recess 59 in Fig. 2 of the Berndtsson reference and diaphragm 58 assist during sample taking, as described in column 4, lines 24-34. Chamber 61 in Fig. 2 of the Berndtsson reference is connected to cylinder 44 via channels 49 and 60, and through channel 53 when valve body 51 of cylindrical valve

chamber 52 is turned in the rightward position, as shown in Figs. 5-8.

Moreover, measuring channel 63 is separated from channel 61 in Fig. 2 of the Berndtsson reference and does not characterize particles passing through channels 49 and 60, and through channel 63. That is, measuring channel 63 instead characterizes particles passing through measuring channel 63. Measuring channel 63 does not characterize particles passing through a first orifice that is disposed in a first wall that separates a first collection chamber from a first mixing chamber, as would be necessary to meet the further features of claim 29. Accordingly, Applicant respectfully submits that the cartridge of claim 29 distinguishes over the Berndtsson reference as relied upon by the Examiner, and that this rejection, insofar as it may pertain to claims 29, 32, 35, 43, 46-50 and 53, is improper for at least these reasons.

Incidentally, the sampling device of the Berndtsson reference as noted above includes measuring channel 63 with a capillary for detection of particles. This results in less accurate measurements than the first particle characterizer of claim 29, which is featured as characterizing particles passing through the first orifice. That is, the capillary of measuring channel 63 of the Berndtsson reference produces noisier measurements than the first particle characterizer of claim 29 that characterizes particles passing through the first orifice. Moreover, the first collection chamber of claim 29 makes it possible to count particles in a larger volume. In contrast, in the Berndtsson reference the counted sample must remain in measuring channel 63. In addition, the cartridge of claim 29 has a corresponding flow cycle that is much simpler

than the cycle of the apparatus disclosed in the Berndtsson reference, since there is no need to move a diluted sample back and forth within the cartridge of claim 29. That is, in the cartridge of claim 29, the liquid sample passes through the orifice once. The means of creating flow in the Berndtsson reference (a piston moving back and forth) is thus more complicated than in the cartridge of claim 29. The cartridge of claim 29 may thus be manufactured cheaper.

Accordingly, a problem to be solved in connection with the present application is to provide a cartridge with improved measurement accuracy and a simplified flow system. The Berndtsson reference does not achieve these objects, and provides no motivation to modify the disclosed apparatus to meet the features of claim 29. Accordingly, Applicant respectfully submits that the cartridge of claim 29 distinguishes over the Berndtsson reference as relied upon by the Examiner, and that this rejection, insofar as it may pertain to claims 29, 32, 35, 43, 46-50 and 53, is improper for at least these additional reasons.

#### **Claim Rejections-35 U.S.C. 103**

Claims 30, 34, 41, 44, 45 and 55 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Berndtsson reference, in view of the Gorin et al. reference (U.S. Patent No. 5,077,017).

Claims 37-40 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Berndtsson reference, in view of the Besemer et al. reference (U.S. Patent No.

5,104,813).

Claim 42 has been rejected under 35 U.S.C. 103(a) as being unpatentable over the Berndtsson reference, in view of the Kelley reference (U.S. Patent No. 5,257,984).

Claims 33 and 54 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Berndtsson reference in view of the Feistel reference (U.S. Patent No. 6,426,230).

Claim 56 has been rejected under 35 U.S.C. 103(a) as being unpatentable over the Berndtsson and Gorin et al. references, in further view of the Feistel reference.

Applicant respectfully submits that the above noted references as secondarily relied upon do not overcome the above noted deficiencies of the primarily relied upon Berndtsson reference. Applicant therefore respectfully submits that these rejections are improper for at least these reasons.

#### **Allowable Subject Matter**

Applicant notes the Examiner's acknowledgement that claim 31 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Applicant however respectfully submits that claim 31 should be allowable at least by virtue of dependency upon claim 29, and that amendment of claim 31 to be in independent form is thus unnecessary.

**Claims 57-62**

Applicant respectfully submits that claims 57-62 distinguish over and would not have been obvious in view of the prior art as relied upon by the Examiner, at least by virtue of dependency upon claim 29 for the reasons as set forth above, and by further reason of the features therein.

**Conclusion**

The Examiner is respectfully requested to reconsider and withdraw the corresponding rejections, and to pass the claims of the present application to issue, for at least the above reasons.

In the event that there are any outstanding matters remaining in the present application, please contact Andrew J. Telesz, Jr. (Reg. No. 33,581) at (571) 283-0720 in the Washington, D.C. area, to discuss these matters.

Pursuant to the provisions of 37 C.F.R. 1.17 and 1.136(a), the Applicant hereby petitions for an extension of two (2) months to March 28, 2008, for the period in which to file a response to the outstanding Office Action. The required fee of \$490.00 should be charged to Deposit Account No. 50-0238.



If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment for any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-0238.

Respectfully submitted,

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Enclosures: Two (2) drawing Annotated Sheets  
Two (2) drawing Replacement Sheets